

CLAIMS

What is claimed:

1. A fan assembly for a computer, comprising:

a stator component;

a rotor component mounted to the stator component for rotation about an axis;

a first set of blades mounted to the rotor component, the blades expelling air therefrom in a radial direction away from the axis upon rotation of the rotor component; and

a first set of fins mounted to the stator component in an arrangement at least partially surrounding the first set of blades.
2. The fan assembly of claim 1 wherein the arrangement of the first set of fins is substantially circular.
3. The fan assembly of claim 2 wherein the fins of the first set of fins entirely surround the first set of blades.
4. The fan assembly of claim 1 wherein the fins of the first set of fins entirely

surround the first set of blades.

5. The fan assembly of claim 1 further comprising:

a second set of blades mounted to the rotor component around the first set of fins, air leaving the first set of blades passing over the first set of fins, whereafter the air is expelled by the second set of blades.

6. The fan assembly of claim 5 further comprising:

a second set of fins mounted to the stator component, the air being expelled by the second set of blades passing over the second set of fins.

7. The fan assembly of claim 6 wherein the second set of fins are in an arrangement at least partially surrounding the second set of blades.

8. The fan assembly of claim 7 wherein the arrangement of the second set of fins is substantially circular.

9. The fan assembly of claim 1 wherein the stator component includes a heat pipe.

10. The fan assembly of claim 9 wherein the heat pipe includes a length

located adjacent subsequent ones of the fins of the first set of fins.

11. The fan assembly of claim 10 wherein the fins of the first set of fins are mounted to the length of the heat pipe.

12. The fan assembly of claim 1 wherein the stator component is a shroud forming an enclosure with the blades and the fins in the enclosure, the shroud having an inlet port to allow air into the enclosure and an exit port allowing air out of the enclosure.

13. The fan assembly of claim 12 wherein the inlet port allows air into the enclosure substantially in direction of the axis and the exit port allows air out of the enclosure substantially in a direction away from the axis.

14. The fan assembly of claim 13 wherein at least 90% of air from the enclosure is expelled to one side of the shroud out of the exit port.

15. The fan assembly of claim 13 wherein at least some of the fins of the first set of fins are located between at least some of the blades of the first set of blades and the exit port.

16. The fan assembly of claim 12 wherein the shroud includes a heat pipe.

17. A fan assembly for a computer, comprising:

a stationary subassembly including a stator component and first and second sets of fins mounted to the stator component, each set of fins forming at least a partial circular arrangement with the first set of fins located within the circular arrangement of the second set of fins; and

a rotating subassembly including a rotor component rotatably mounted to the stator component and first and second sets of blades mounted to the rotor component so as to be rotatable together with the rotor component, each set of blades forming a circular arrangement with the first set of blades located within the circular arrangement of the first set of fins and the second set of blades located within a circular gap defined outerly of the circular arrangement of the first set of fins and internally of the circular arrangement of the second set of fins.

18. The fan assembly of claim 17 wherein the stator component includes a heat pipe.

19. The fan assembly of claim 17 wherein the stator component is a shroud forming an enclosure with the blades and the fins in the enclosure, the shroud having an inlet port to allow air into the enclosure and an exit port allowing air

out of the enclosure.

20. A method of cooling a processor of a computer, comprising:
transferring heat from the processor to first and second sets of fins; and
rotating a rotor component about an axis, the rotor component having
first and second sets of blades mounted thereto, so that air flows away from the
axis sequentially over the first set of blades, the first set of fins, the second set of
blades, and the second set of fins.

21. The method of claim 20 wherein the first and second sets of fins form first
and second arrangements that are at least partially circular and the first and
second sets of blades form third and fourth circular arrangements, the first to the
fourth circular arrangements being located within one another.

22. The method of claim 20 wherein the heat is transferred through a heat
pipe.